

23. 6.22
 (قوة دفع الناتجة من الضغط الجوي من بعض الجزيئات)
 Q4: دقة وتقريرا الشك لكل من بعضهما البعض

2
 7.8 - 0.34
 1.15 + 0.82

CHOOSE THE CORRECT ANSWERS

Q1: Pure water is:
 (A) an element
 (B) a molecular compound
 (C) a homogeneous mixture
 (D) a heterogeneous mixture
 (E) an ionic compound

Q2: Which of the following is an SI derived unit:
 (A) cubic meter "m³" for volume
 (B) gram per liter "g/L" for density
 (C) gram "g" for mass
 (D) mile per hour "mi/h" for speed
 (E) Kelvin "K" for temperature

Q3: If the temperature is -40 °F, its value in °C is:
 (A) 0
 (B) -8
 (C) 40
 (D) -32
 (E) -40

$F = \frac{9}{5}C + 32$
 $C = \frac{5}{9}(F - 32)$
 $= \frac{5}{9}(-40 - 32) = -40$

Q4: Knowing that the volume of a bubble is $(\frac{4}{3}\pi r^3)$, if a bubble contains 0.105 g of a gas and if the radius (r) of the bubble is 2.6 cm, the density in g/L of the gas in this bubble is:
 (A) 1.25
 (B) 1.98
 (C) 1.43
 (D) 1.14
 (E) 12.49

$V = \frac{4}{3} \times 3.14 \times (2.6 \text{ cm})^3 = 73.58 \text{ cm}^3$
 $d = \frac{m}{V} = \frac{0.105 \text{ g}}{73.58 \text{ cm}^3} \times \frac{10^6 \text{ cm}^3}{1 \text{ m}^3} = 1.43 \text{ g/L}$

Q5: The number of significant figures in 0.07080 m, is:
 (A) Three
 (B) four
 (C) five
 (D) six
 (E) Two

Q6: At a certain temperature, if the speed of sound is 343 m/s; its speed in km/h is:
 (A) 1.23×10^3
 (B) 1.23×10^6
 (C) 1.26×10^4
 (D) 2.10×10^4
 (E) 1.30×10^4

$\frac{343 \text{ m}}{s} \times \frac{1 \text{ km}}{1000 \text{ m}} \times \frac{60 \text{ s}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ h}}$
 $= 1.23 \times 10^3 \text{ km/h}$

Q7: For the following equation:
 $\frac{(7.8 - 0.34)}{(1.15 + 0.82)} = X$
 the value of X with the correct number of significant figures is:

(A) 3.787
 (B) 3.79
 (C) 4
 (D) 3.80
 (E) 3.8

$X = \frac{7.46}{1.97} = \frac{7.5}{1.97} = 3.807 = 3.8$

Q8: Three students (A, B and C) were asked to measure 87.0 mL of ethanol with a graduated cylinder. The student's measurements were as follow:

A	B	C
87.1	86.9	87.7
88.2	87.1	87.8

Which of the following is correct:
 (A) Student A is the most precise and the least accurate
 (B) Student B is the most precise and student C is the most accurate
 (C) Student C is the most precise and student B is the most accurate
 (D) Student B is the most precise and the least accurate
 (E) Student A is the most precise and the least accurate

Q9: Which of the following statements is true?
 (A) All particles in the nucleus of an atom are charged.
 (B) The atom is best described as a uniform sphere of matter in which electrons are embedded.
 (C) The mass of the nucleus is only a very small fraction of the mass of the entire atom.
 (D) The volume of the nucleus is only a very small fraction of the total volume of the atom.
 (E) The number of neutrons in a neutral atom must equal the number of electrons.

$N = e$

Q10: The isotope of an unknown element, X, has a mass number of 79. The most stable ion of the isotope has 36 electrons and forms a binary ionic compound with sodium, having a formula of NaX. Which of the following statements is *true*?

- (A) NaX is a covalent compound
- (B) The isotope of X has 35 protons
- (C) The isotope of X has 43 neutrons
- (D) X is the krypton element, Kr
- (E) The isotope of X has 43 protons

Q11: Which of the compounds NH_4Cl , CCl_4 , NF_3 and BaF_2 is/are likely to be ionic?

- (A) Only NH_4Cl
- (B) Only NF_3
- (C) Both CCl_4 and BaF_2
- (D) Both NH_4Cl and BaF_2
- (E) Both CCl_4 and NF_3

Q12: Which of the following is true?

	Substance	Protons	Neutrons	Electrons
(A)	$^{120}_{50}\text{Sn}$	70	50	70
• (B)	$^{25}_{12}\text{Mg}^{2+}$	12	13	12
(C)	$^{56}_{26}\text{Fe}^{2+}$	26	30	24
(D)	$^{32}_{16}\text{S}^{2-}$	16	18	18
(E)	$^{35}_{17}\text{Cl}$	18	18	18

Q13: The formula of hypobromous acid and of bromite ion respectively are:

- (A) HBrO_2 and BrO_2^-
- (B) HBrO and BrO^-
- (C) HBrO_2 and BrO^{2-}
- (D) HBrO_2 and BrO^-
- (E) HBrO and BrO_2^-

Q14: The name of the compound which has the formula " $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$ " is:

- (A) Iron (III) chloride hexahydrate
- (B) Ferrous (III). hexahydrate
- (C) Iron (III) chloride water (VI)
- (D) Iron trichloride hexawater
- (E) Iron chloride hexahydrate

Q15: Which of the following name is not true:

- ✓ (A) Dihydrogen monoxide (water) H_2O
- ✓ (B) Carbon dioxide (dry ice) CO_2
- ✓ (C) Dinitrogen monoxide (laughing gas) N_2O
- ✓ (D) Hydrogen monoiodide HI
- ✓ (E) Dinitrogen tetrachloride N_2Cl_4